



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/403,338	10/19/1999	SEINOSUKE HORIKI	2710/60471	7137

7590 12/28/2007  
COOPER & DUNHAM  
1185 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036

EXAMINER
----------

KRUER, KEVIN R

ART UNIT	PAPER NUMBER
----------	--------------

1794

MAIL DATE	DELIVERY MODE
-----------	---------------

12/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/403,338	<b>Applicant(s)</b> HORIKI ET AL.	
	<b>Examiner</b> Kevin R. Kruer	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5-10,12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) 9,10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870, JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Taylor (US 4,292,105) for reasons of record.

Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Each Yuka reference teaches the use of said ammonia and/or amine catalyst, the applied art reads on each limitation of the claimed invention ('329-007; '870-008; '092-008; '609-008). Specifically, the ammonia or amine catalyst may be used in amounts of 6wt% or less, which is sufficient specific to meet the claimed range (609, paragraph 0009).

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 do not teach that the resin should be advanced to the B-stage of curing. However, Taylor teaches a fibrous textile impregnated with a thermosetting polymer (col 1, lines 10+). Taylor teaches that the polymerization of the thermosetting polymer should be advanced to the B-stage, because the impregnated material can be stored for a reasonable length of time in that state (col 1, lines 18+). Thus, it would have been obvious to one of ordinary skill in the art to cure the resins taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 to the B-stage after impregnation in order to obtain a product that could be stored for a reasonable length of time.

3. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870), JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Benzinger (US 3,617,613) for reasons of record.

Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Each Yuka reference teaches the use of said ammonia and/or amine catalyst, the applied art reads on each limitation of the claimed invention ('329-007; '870-008; '092-008; '609-008). Specifically, the ammonia or amine catalyst may be used in amounts of 6wt% or less, which is sufficient specific to meet the claimed range.

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 do not teach that the resin should be advanced to the B-stage of curing. However, Benzinger teaches a glass fiber sheet impregnated with a thermosetting resin (abstract). Benzinger teaches that the flow rate of a thermosetting resin can be controlled by polymerizing the polymer to the B stage. Thus, it would have been obvious to one of ordinary skill in the art to cure the resins taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 to the B stage in order to control the resin's flow.

4. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870, JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Casadevall (US 3,960,626) for reasons of record.

Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The

Art Unit: 1794

phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Each Yuka reference teaches the use of said ammonia and/or amine catalyst, the applied art reads on each limitation of the claimed invention ('329-007; '870-008; '092-008; '609-008). Specifically, the ammonia or amine catalyst may be used in amounts of less than 6wt%, which is sufficient specific to meet the claimed range (eg see 609, paragraph 0009).

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 do not teach that the resin should be cured to the B stage. However, Casadevall teaches that the handlability of fiber impregnated with a phenolic resin can be improved by curing to the B stage. Thus, it would have been obvious to one of ordinary skill in the art to cure the resins taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 in order to improve their handlability.

5. Claims 6-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franz et al. (US 3,922,459) in view of JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870), JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609) for reasons of record.

Franz teaches a web of fibers impregnated (abstract) with a phenol formaldehyde resin (col 8, line 51). A metal foil may be glued to one or both sides of the impregnated fibers (col 8, lines 32-36).

Franz does not teach that the fibers should be impregnated with the claimed sulfomethylated or sulfomethylated phenolic resin. However, Yuka'329, Yuka'870, Yuka'192, and Yuka'609 each individually teach sulfomethylated condensation polymers. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation). Such resins have better pot life and better water solubility than phenol formaldehyde resins. Therefore, it would have been obvious to utilize the sulfomethylated phenolic condensation polymers taught in Yuka'329, Yuka'870, Yuka'192, and Yuka'609 in place of the phenolic formaldehyde resin taught in Franz because such sulfomethylated resins have better pot life and water solubility-thus making processing easier.

With regard to claim 14, the metal layer is understood to be the claimed "base sheet," the glue is understood to read on the claimed "adhesive" and the phenolic resin is understood to read on "the cured material." With regard to the limitation that the resin is at least partially sulfomethylated and/or sulfimethylated "at a time when said phenolic resin is at B-stage," the examiner takes the position that the method of making the product does not patentably distinguish a claimed product from a product taught in the prior art unless it can be shown that the method of making a product inherently results in a materially different product. In the present application, no such showing has been made.

Art Unit: 1794

6. Claims 6-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (US 3,619,342) in view of JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870), JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609) for reasons of record.

Burke teaches a corrugated fiberboard which resists deterioration in strength when in the presence of water. The board comprises liner members bonded to either side of a corrugate medium that has been treated with phenol aldehyde resole resin (abstract). The phenol aldehyde resole should have a water solubility such that an aqueous solution comprising 55wt% resin solids can be prepared (col 2, line 75).

Burke does not teach that the medium should be impregnated with the claimed sulfomethylated or sulfimethylated phenolic resin. However, Yuka'329, Yuka'870, Yuka'192, and Yuka'609 each individually teach sulfomethylated condensation polymers. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor (abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation). Such resins have better pot life and better water solubility than phenol formaldehyde resins. Therefore, it would have been obvious to utilize the sulfomethylated phenolic condensation polymers taught in Yuka'329, Yuka'870, Yuka'192, and Yuka'609 in place of the phenolic formaldehyde resin taught in Burke because such sulfomethylated resins have better water solubility, thus making it easy to prepare an aqueous solution comprising 55wt% resin solids.

With regard to claim 14, the liner members are understood to be the claimed "base sheet," the adhesive (col 6, lines 6+) is understood to read on the claimed "adhesive" and the phenolic resin is understood to read on "the cured material." With regard to the limitation that the resin is at least partially sulfomethylated and/or sulfimethylated "at a time when said phenolic resin is at B-stage," the examiner takes the position that the method of making the product does not patentably distinguish a claimed product from a product taught in the prior art unless it can be shown that the method of making a product inherently results in a materially different product. In the present application, no such showing has been made.

### ***Response to Arguments***

Applicant's arguments filed October 15, 2007 have been fully considered but they are not persuasive.

Applicant argues the new amine/ammonia catalyst amount distinguishes the claimed invention from the prior art. The examiner respectfully disagrees. Specifically, the ammonia or amine catalyst may be used in amounts of less than 6wt% (609, paragraph 0009) which is sufficient specific to meet the claimed range. Applicant argues the curing rate for the phenolic resin becomes suddenly large at a temperature higher than a fixed temperature and that the curing temperature can be controlled by the additional amount of amine. Said distinctions are method benefits that do not patentably distinguish the claimed product from the product taught in the prior art. They are also understood to be inherent to the prior art compositions since said compositions comprise the same components in the same relative amounts. Furthermore, applicant

Art Unit: 1794

has failed to demonstrate that said feature exist within the claimed range, are inherent to the claimed amount of catalyst, and are unexpected in view of the closet prior art. Thus, applicant has failed to meet their burden in demonstrating unexpected results. Applicant argues said features are inherent to the newly claimed amount of catalyst but fails to point to evidence in support of said conclusion. It is noted that counsel's arguments cannot take the place of evidence. Furthermore, as noted in the rejection, the prior art references teach the use of catalyst with sufficient specificity to anticipate the claimed range.

For the reasons noted above, the rejections are maintained.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

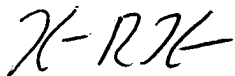
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1794

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R. Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'K-RK'.

Kevin R. Kruer  
Patent Examiner-Art Unit 1794